SKU:SEN0171 (https://www.dfrobot.com/product-1140.html)

Introduction

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Pyroelectric infrared motion sensor (https://www.dfrobot.com/product-1140.html) can detect the infrared signals from a person or animals which are moving, and can output the switching detection signals. Therefore it can be applied to a variety of occasions which need to detect the movement of a persons body. Conventional pyroelectric infrared sensors require pyroelectric infrared detector, a professional chip and a complex peripheral circuit. This causes a difficult user expereince and can lead to reliability issues. Now we launched this new pyroelectric infrared motion sensor especially designed for Arduino. A compact integrated digital body pyroelectric infrared sensor is used, leading to high reliability, low power consumption, and simple peripheral circuit.

Specification

- Input Voltage: 3.3 ~ 5V, 6V Maximum
- Working Current: 15uA
- Working Temperature: -20 ~ 85 ℃
- Output Voltage: High 3V, low 0V
- Output Delay Time(High Level): About 2.3 to 3 Seconds
- Detection angle: 100 °
- Detection distance: 7 meters
- Output Indicator LED(When output HIGH,it will be ON)

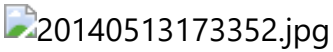
- Pin limit current: 100mA
- Connection Interface: PH2.0-3
- Module size: 30mm × 22mm

Application

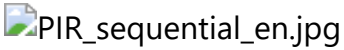
- Intrusion Alarm
- Non-contact infrared automatic switch

Board Overview

Diagram



Overview of the Detector

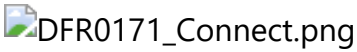
The pyroelectric infrared motion sensor integrates a digital integrated body pyroelectric infrared detector, whose model is AM412. This detector is a digital intelligent PIR sensor. It interfaces directly with up to two conventional PIR sensors via a high impedance differential input. The PIR signal is converted to a 15 bit digital value on chip. A LED indicates whenever the PIR signal is above the selected threshold. All signal processing is performed digitally. 

Output Characteristic

When the pyroelectric infrared motion sensor detects the movement of a body within the detection range, the output pin will output a high level(3V) and the output led is ON; Without an infrared Pyroelectric signal, the output pin will output low level(0V) and the output led is OFF. Pay attention: Once the IR signal disappears, the output pin will output low level delay roughly 2.3~3 seconds. So we can quickly establish a body motion detection application according to this feature. Note:When the sensor just powers on, there will be unstable for a short time. The output level will be jittered, but stabilize shortly.

Tutorial

Connection Diagram



Sample Code

Just download the sample code. Move your body to play with the tiny motion sensor.

```
// #
// # Editor     : Youyou from DFRobot
// # Date       : 04.06.2014
// # E-Mail : youyou.yu@dfrobot.com

// # Product name: PIR (Motion) Sensor
// # Product SKU : SEN0171
// # Version     : 1.0

// # Description:
// # The sketch for using the PIR Motion sensor with Arduino/Raspberry Pi controller to achieve the human detection feature.

// # Hardware Connection:
// #        PIR Sensor    -> Digital pin 2
// #        Indicator LED -> Digital pin 13
// #

byte sensorPin = 2;
byte indicator = 13;

void setup()
{
  pinMode(sensorPin,INPUT);
  pinMode(indicator,OUTPUT);
  Serial.begin(9600);
}

void loop()
{
  byte state = digitalRead(sensorPin);
  digitalWrite(indicator,state);
```

```
  digitalWrite(indicator,state);
  if(state == 1)Serial.println("Somebody is in this area!");
  else if(state == 0)Serial.println("No one!");
  delay(500);
}
```

Expected Results

When the sensor detects the living movement body within detection range, the output pin will output high voltage of 3V, while the output indicator is lighted.Otherwise,after 2~3s,the output pin will output high voltage of 0V, while the output indicator is extinguished.

```
Note: When the sensor just on electricity, there will be unstable for a short time, the output terminal will be level shake!
```

FAQ

Q&A	Some general Arduino Problems/FAQ/Tips
A	For any questions, advice or cool ideas to share, please visit the **DFRobot Forum** (https://www.dfrobot.com/forum/).

More Documents

- Schematic (https://www.dfrobot.com/image/data/SEN0171/SEN0171_V1_Schematic.pdf)
- Library installation (https://www.arduino.cc/en/Guide/Libraries#.UxU8mdzF9H0)

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